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*The  
Connecticut  
Agricultural  
Experiment  
Station,  
New Haven*

**Inspection of  
Commercial  
Fertilizers 1993**

BY MARY JANE INCORVIA MATTINA

*Bulletin 916  
March 1994*

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From January 1, 1993 to December 31, 1993 one-hundred and fourteen samples of fertilizer were collected by inspectors of the Connecticut Department of Agriculture. The samples were examined by the Analytical Chemistry Department of the Connecticut Agricultural Experiment Station for compliance of the label guarantees with State of Connecticut Regulations. Included in this Bulletin are the results of the analyses of the macronutrients, nitrogen, phosphoric acid, and potash, for the samples.

The results of these analyses are included in Table 1. This year 28 manufacturers are represented in the survey. A sample is considered unsatisfactory if the value for a parameter is below the guaranteed value by more than the permissible percentage established by the Association of American Plant Food Control Officials. We found 16 samples (14.0%) to be deficient in nitrogen, 8 samples (7.0%) to be deficient in phosphoric acid, and 6 samples (5.2%) to be deficient in potash. A total of 28 samples (24.6%) were deficient in one or more parameters. A deficiency in one of the macronutrients is indicated by a minus (-) sign next to the "Found%" value in Table 1.

Table 2 summarizes the total tonnage of several multiple nutrient fertilizers sold in Connecticut for the period indicated. Table 3 lists the tonnage of some additional fertilizer materials sold in Connecticut during the same period.

The samples were collected by Alton VanDyke, the Fertilizer Control Official for the Connecticut Department of Agriculture. The analyses were performed by Craig Musante and Mamie Pyles under the supervision of Dr. David Stilwell.

Mary Jane Incorvia Mattina  
Head, Department of Analytical Chemistry

Table 1. Analysis of individual fertilizer samples.

|                              | N<br>Guar% | Found% | P <sub>2</sub> O <sub>5</sub><br>Guar% | Found% | K <sub>2</sub> O<br>Guar% | Found% |
|------------------------------|------------|--------|--|--------|---------------------------|--------|
| <b>AGRITURF</b>              |            |        |  |        |                           |        |
| Agriturf                     | 20         | 20.6   | 10                                     | 0.6    | 15                        | 20.6   |
| <b>AGWAY, INC.</b>           |            |        |  |        |                           |        |
| Agway Bulk                   | 28         | 30.4   | 11                                     | 11.7   | 11                        | 11.2   |
| Agway Bulk                   | 46         | 46.5   | 0                                      | 0      | 0                         | 0      |
| Agway Bulk                   | 28         | 29.0   | 11                                     | 14.2   | 11                        | 10.9   |
| Agway Bulk                   | 37         | 40.1   | 0                                      | 11     | 10.3                      |        |
| Agway Bulk                   | 27         | 27.3   | 5                                      | 6.0    | 18                        | 18.6   |
| Agway Bulk                   | 0          | 2.3    | 11                                     | 12.2   | 46                        | 52.2   |
| Agway Bulk                   | 23         | 23.9   | 13                                     | 13.1   | 18                        | 18.6   |
| Agway Bulk                   | 23         | 24.9   | 12                                     | 9.1-   | 18                        | 19.9   |
| Agway Bulk                   | 22         | 22.6   | 14                                     | 18.2   | 17                        | 20.4   |
| Agway Bulk                   | 23         | 24.9   | 12                                     | 12.3   | 18                        | 17.9   |
| Agway Bulk                   | 23         | 23.9   | 12                                     | 13.8   | 18                        | 19.2   |
| Agway Bulk                   | 0          | 3.8    | 14                                     | 15.2   | 42                        | 45.3   |
| Agway Grassroots Lawn        | 27         | 22.6-  | 2                                      | 3.0    | 11                        | 12.2   |
| Agway Greenlawn Lawn         | 32         | 38.8   | 3                                      | 3.4    | 5                         | 6.4    |
| Agway Garden Plant           | 5          | 5.4    | 10                                     | 13.5   | 5                         | 5.6    |
| Agway Blend-Rite             | 15         | 10.5-  | 15                                     | 14.9   | 15                        | 16.4   |
| Agway Nature's Way           | 4          | 4.9    | 5                                      | 5.2    | 4                         | 3.3-   |
| Agway Early Edge Crop        | 10         | 10.3   | 20                                     | 19.4   | 10                        | 11.8   |
| Agway Blend-Rite             | 5          | 5.3    | 10                                     | 10.6   | 10                        | 9.3    |
| Agway Blend-Rite             | 15         | 17.4   | 8                                      | 10.1   | 12                        | 12.4   |
| Agway Blend-Rite             | 10         | 8.2-   | 10                                     | 9.0    | 10                        | 10.4   |
| Agway Early Edge             | 13         | 12.5   | 13                                     | 13.3   | 13                        | 14.1   |
| <b>A.H. HOFFMAN, INC</b>     |            |        |  |        |                           |        |
| Hoffman Vegetable            | 5          | 5.0    | 10                                     | 9.8    | 5                         | 5.1    |
| Hoffman Plant & Shrub        | 5          | 7.3    | 20                                     | 5.5-   | 10                        | 5.5-   |
| <b>CADWELL &amp; JONES</b>   |            |        |  |        |                           |        |
| C&J Specialty                | 10         | 14.8   | 10                                     | 14.8   | 10                        | 11.9   |
| C&J Specialty                | 18         | 19.8   | 5                                      | 6.8    | 10                        | 11.6   |
| C&J Super Surge              | 20         | 15.0-  | 10                                     | 13.3   | 10                        | 15.0   |
| C&J Specialty                | 5          | 5.3    | 10                                     | 11.6   | 10                        | 7.8-   |
| Old Fox                      | 25         | 22.0-  | 5                                      | 5.4    | 10                        | 10.2   |
| C&J Specialty                | 10         | 8.1-   | 20                                     | 20.1   | 10                        | 10.4   |
| C&J Specialty                | 18         | 20.2   | 23                                     | 24.1   | 12                        | 13.7   |
| C&J Specialty                | 18         | 17.5   | 11                                     | 9.9-   | 17                        | 18.2   |
| C&J Surge                    | 7          | 7.1    | 7                                      | 8.2    | 7                         | 7.5    |
| C&J Fall Feed                | 25         | 25.5   | 5                                      | 6.3    | 20                        | 23.0   |
| C&J Turf Green Gro           | 20         | 18.5-  | 4                                      | 5.4    | 8                         | 12.0   |
| C&J Turf Grow                | 10         | 9.8    | 6                                      | 6.5    | 4                         | 4.4    |
| C&J Specialty                | 5          | 7.7    | 10                                     | 17.4   | 5                         | 6.8    |
| <b>CAROLINA EASTERN VAIL</b> |            |        |  |        |                           |        |
| Carovail                     | 10         | 11.1   | 10                                     | 12.7   | 10                        | 11.7   |
| Carovail Fertilizer          | 10         | 10.6   | 10                                     | 10.6   | 10                        | 10.1   |

Table 1. Analysis of individual fertilizer samples (continued).

|                                       | N     |        | P <sub>2</sub> O <sub>5</sub> |        | K <sub>2</sub> O |        |
|---------------------------------------|-------|--------|-------------------------------|--------|------------------|--------|
|                                       | Guar% | Found% | Guar%                         | Found% | Guar%            | Found% |
| <b>CHEVRON CHEMICAL CO</b>            |       |        |                               |        |                  |        |
| Ortho Bulb Food                       | 4     | 5.1    | 12                            | 14.9   | 8                | 9.5    |
| Ortho Rose Food                       | 8     | 10.0   | 12                            | 13.1   | 4                | 3.8    |
| Ortho Flower Garden Food              | 11    | 17.3   | 8                             | 12.0   | 7                | 9.7    |
| Ortho Vegetable Food                  | 8     | 9.8    | 10                            | 12.5   | 8                | 6.9-   |
| Ra Pid Gro Bloom                      | 19    | 19.5   | 24                            | 26.6   | 18               | 19.1   |
| Ra Pid Gro Tom/Veg                    | 18    | 17.7   | 21                            | 21.2   | 21               | 21.1   |
| <b>CLINTON NURSERY PRODUCTS, INC.</b> |       |        |                               |        |                  |        |
| New Era Violet Food                   | 4     | 6.2    | 10                            | 11.5   | 10               | 11.7   |
| New Era 100% Organic                  | 3     | 3.1    | 5                             | 6.6    | 1                | 1.4    |
| New Era Plant Food                    | 8     | 8.9    | 8                             | 8.8    | 8                | 9.2    |
| New Era Flowering Plant               | 6     | 7.1    | 12                            | 15.7   | 6                | 8.7    |
| New Era Regular Plant                 | 12    | 12.0   | 6                             | 7.3    | 6                | 8.4    |
| <b>CROP PRODUCTION SERVICES</b>       |       |        |                               |        |                  |        |
| CPS                                   | 10    | 7.4-   | 8                             | 11.0   | 10               | 13.4   |
| Village Green Premium                 | 18    | 15.8-  | 3                             | 3.8    | 3                | 3.4    |
| CPS 10-10-10                          | 10    | 8.7-   | 10                            | 9.8    | 10               | 9.3    |
| CPS Custom Kosut                      | 22    | 22     | 11                            | 11.8   | 22               | 21.3   |
| CPS                                   | 24    | 24.9   | 12                            | 12.7   | 18               | 18.2   |
| Village Green Professional            | 20    | 13.6-  | 10                            | 11.0   | 10               | 9.5    |
| CPS                                   | 5     | 4.2-   | 10                            | 9.3    | 10               | 11.1   |
| CPS                                   | 10    | 6.0-   | 10                            | 7.9    | 10               | 7.1    |
| CPS                                   | 15    | 15.1   | 10                            | 12.7   | 10               | 10.3   |
| Village Green Professional            | 24    | 23.8   | 3                             | 4.9    | 5                | 5.1    |
| Nassau Suffolk Turf                   | 14    | 11.1-  | 14                            | 13.6   | 14               | 24.3   |
| CPS                                   | 10    | 9.2-   | 10                            | 10.5   | 10               | 10.4   |
| CPS                                   | 10    | 12.8   | 6                             | 1.4-   | 4                | 3.0    |
| CPS                                   | 10    | 9.6    | 20                            | 20.6   | 20               | 20.7   |
| CPS                                   | 15    | 15.3   | 10                            | 12.8   | 10               | 11.2   |
| CPS                                   | 5     | 2.6-   | 10                            | 5.9-   | 10               | 8.2    |
| <b>ESPOMA CO.</b>                     |       |        |                               |        |                  |        |
| Espoma Organic                        | 18    | 18.0   | 8                             | 11.4   | 6                | 5.8    |
| Espoma Bulb-Tone                      | 4     | 4.9    | 10                            | 13.0   | 6                | 8.5    |
| Espoma Holly-Tone                     | 4     | 4.5    | 6                             | 5.8    | 4                | 10.7   |
| Espoma garden-Tone                    | 4     | 4.1    | 6                             | 8.0    | 6                | 8.7    |
| Espoma Plant-Tone                     | 5     | 5.4    | 3                             | 5.2    | 3                | 8.1    |
| <b>FISH N' GRO</b>                    |       |        |                               |        |                  |        |
| Fish 'n Gro Plant Food                | 1.1   | 0.8    | 0.5                           | 1.0    | 0.3              | 0.3    |
| <b>GRACE SIERRA HORT. PRODS. CO</b>   |       |        |                               |        |                  |        |
| Peter's Concentrated                  | 5     | 6.0    | 10                            | 11.8   | 5                | 6.2    |
| Peter's Professional                  | 20    | 22.1   | 20                            | 23.3   | 20               | 21.9   |
| Peter's Professional Soluable         | 15    | 15.2   | 30                            | 35.4   | 15               | 18.2   |
| Once Season Long Plant                | 16    | 16.5   | 8                             | 9.4    | 12               | 14.3   |
| Osmocote Time Release                 | 17    | 16.9   | 6                             | 6.4    | 10               | 13.2   |

Table 1. Analysis of individual fertilizer samples (continued).

|                              | N<br>Guar% | N<br>Found% | P <sub>2</sub> O <sub>5</sub><br>Guar% | P <sub>2</sub> O <sub>5</sub><br>Found% | K <sub>2</sub> O<br>Guar% | K <sub>2</sub> O<br>Found% |
|------------------------------|------------|-------------|--|---|---------------------------|----------------------------|
| GREEN CHARGER FERTILIZER CO. |            |             |  |   |                           |                            |
| Green Charger                | 10         | 10.5        | 10                                     | 11.7                                    | 10                        | 11.3                       |
| Green Charger                | 5          | 6.9         | 10                                     | 12.9                                    | 10                        | 12.6                       |
| Green Charger                | 5          | 7.0         | 10                                     | 14.3                                    | 5                         | 9.4                        |
| JRM CHEMICAL DIV.            |            |             |  |   |                           |                            |
| Soil Moist Plus              | 5          | 10.0        | 5                                      | 2.3-                                    | 5                         | 2.3                        |
| LEBANON CHEMICAL CORP.       |            |             |  |   |                           |                            |
| Greenview Green Start        | 9          | 12.8        | 17                                     | 18.7                                    | 9                         | 12.5                       |
| MILLORGANITE DIV. MMSD       |            |             |  |   |                           |                            |
| Millorganite                 | 6          | 6.7         | 2                                      | 1.9                                     | 0                         |                            |
| OFFSHORE VENTURES INC.       |            |             |  |   |                           |                            |
| Squanto's Secret Plant       | 2          | 2.3         | 4                                      | 4.6                                     | 2                         | 2.3                        |
| O.M. SCOTT & SONS CO.        |            |             |  |   |                           |                            |
| Scotts Turf Builder Plus     | 28         | 28.7        | 3                                      | 2.7                                     | 3                         | 4.8                        |
| Scotts Turf Builder          | 29         | 29.7        | 3                                      | 2.2-                                    | 4                         | 3.8                        |
| Scotts Super Turf            | 35         | 35.4        | 3                                      | 2.9                                     | 5                         | 5.0                        |
| Scotts New Generation        | 14         | 13.9        | 3                                      | 4                                       | 6                         | 8.6                        |
| Scotts Turf Builder          | 29         | 29.6        | 3                                      | 3.1                                     | 4                         | 5.8                        |
| Scotts Super Turf            | 35         | 37.0        | 3                                      | 3.3                                     | 5                         | 5.7                        |
| Scotts Starter               | 20         | 22.8        | 27                                     | 28.4                                    | 5                         | 5.8                        |
| PARKER FERTILIZER CO.        |            |             |  |   |                           |                            |
| Home & Garden Showplace      | 30         | 32.4        | 3                                      | 1.4-                                    | 10                        | 12.4                       |
| Home & Garden Showplace      | 20         | 22.0        | 5                                      | 4.7                                     | 18                        | 16.8-                      |
| PLANT RESEARCH LABORATORIES  |            |             |  |   |                           |                            |
| Oxygen Plus Indoor           | 1          | 1.3         | 2                                      | 2.2                                     | 1                         | 1.1                        |
| PLANTABBS CORP               |            |             |  |   |                           |                            |
| Plantabbs House Plant Food   | 11         | 11.0        | 15                                     | 14.5                                    | 20                        | 21.6                       |
| RINGER CORP.                 |            |             |  |   |                           |                            |
| Ringer Vegetable Garden      | 8          | 7.8         | 5                                      | 5.6                                     | 5                         | 5.1                        |
| Ringer Lawn                  | 9          | 9.4         | 4                                      | 5.2                                     | 4                         | 5.8                        |
| ROSS DANIELS, INC.           |            |             |  |   |                           |                            |
| Ross Gro-Stakes-Evergreens   | 10         | 14.1        | 10                                     | 11.9                                    | 10                        | 11.8                       |
| Ross Gro-Stakes-Trees&shrubs | 16         | 16.8        | 10                                     | 10.2                                    | 9                         | 10.0                       |
| Ross Gro-Stakes-Fruits       | 8          | 13.2        | 16                                     | 20.6                                    | 16                        | 12.2-                      |
| SCHULTZ CO                   |            |             |  |   |                           |                            |
| Schultz Instant              | 8          | 9.0         | 14                                     | 15.8                                    | 9                         | 10.4                       |
| Schultz Instant Liquid       | 10         | 10.7        | 15                                     | 15.7                                    | 10                        | 10.9                       |

Table 1. Analysis of individual fertilizer samples (continued).

|                                    |    | N<br>Guar%<br>Found% |    | P <sub>2</sub> O <sub>5</sub><br>Guar%<br>Found% |    | K <sub>2</sub> O<br>Guar%<br>Found% |
|------------------------------------|----|----------------------|----|--|----|-------------------------------------|
| STERN'S MIRACLE GRO PRODUCTS, INC. |    |                      |    |  |    |                                     |
| Stern's Miracid Plant Food         | 30 | 30.5                 | 10 | 11.2   | 10 | 9.6                                 |
| Stern's Liquid Miracle Gro         | 8  | 8.8                  | 7  | 8.4  | 6  | 7.0                                 |
| Stern's Liquid Miracle Gro         | 7  | 8.0                  | 7  | 8.1  | 7  | 8.3                                 |
| Stern's Miracle Gro Plant Food     | 15 | 15.9                 | 30 | 32.5   | 15 | 19.9                                |
| Miracle Gro Plant                  | 6  | 6.3                  | 12 | 12.1   | 6  | 6.0                                 |
| THE HY-TROUS CO                    |    |                      |    |  |    |                                     |
| Hy-Trous Liquid                    | 5  | 5.8                  | 10 | 11.6   | 5  | 5.4                                 |
| Hy-Trous African Violet            | 4  | 4.9                  | 12 | 11.4   | 4  | 4.3                                 |
| UNIVERSAL CHEMICAL CO.             |    |                      |    |  |    |                                     |
| Electra Plant Food 5-10-3          | 5  | 5.0                  | 10 | 13.6   | 3  | 3.9                                 |
| WEATHERLY CONSUMER PRODUCTS, INC   |    |                      |    |  |    |                                     |
| Jobes Plant Food Spikes            | 13 | 15.1                 | 4  | 4.7  | 5  | 5.5                                 |
| Jobes All Natural Tomato           | 4  | 7.5                  | 8  | 8.1  | 8  | 7.5                                 |
| Jobes Plant Food Spikes            | 10 | 11.6                 | 10 | 12.2   | 4  | 5.7                                 |

Table 2. Multiple nutrient fertilizers shipped in Connecticut from July 1, 1992 to June 30, 1993.<sup>1</sup>

| Grade    | Tons    | Grade    | Tons    |
|----------|---------|----------|---------|
| 0-10-40  | 20.33   | 18-24-12 | 30.0    |
| 0-15-30  | 13.6    | 19-3-4   | 23.5    |
| 1-1-1    | 49.19   | 19-3-6   | 28.2    |
| 4-5-4    | 139.41  | 19-3-12  | 273.87  |
| 4-6-4    | 826.55  | 19-19-19 | 441.98  |
| 5-10-5   | 687.01  | 20-3-3   | 212.28  |
| 5-10-10  | 456.88  | 20-5-10  | 44.13   |
| 6-0-18   | 20.39   | 20-8-8   | 23.4    |
| 6-2-1    | 466.00  | 20-10-10 | 215.96  |
| 8-8-8    | 101.4   | 20-10-20 | 17.0    |
| 8-10-8   | 11.62   | 20-10-25 | 181     |
| 8-12-4   | 20.26   | 20-20-20 | 28.48   |
| 8-16-16  | 28.4    | 22-0-16  | 13.98   |
| 10-5-10  | 95.24   | 22-0-22  | 47.06   |
| 10-6-4   | 580.15  | 24-3-5   | 13.0    |
| 10-6-12  | 46.00   | 24-3-7   | 116     |
| 10-8-10  | 765     | 24-12-18 | 444     |
| 10-10-10 | 1875.41 | 25-3-3   | 55.83   |
| 10-15-15 | 10.31   | 25-3-5   | 125.63  |
| 10-18-10 | 111.73  | 25-3-10  | 82.94   |
| 10-20-10 | 252.29  | 25-4-8   | 59.88   |
| 10-20-15 | 100.95  | 26-3-3   | 36.24   |
| 10-20-10 | 243.43  | 26-4-6   | 102.8   |
| 12-4-8   | 32.74   | 28-3-3   | 921.48  |
| 12-12-12 | 20.58   | 28-3-4   | 455.57  |
| 13-3-7   | 12.83   | 28-3-8   | 198.56  |
| 13-13-13 | 184.89  | 28-3-10  | 304.13  |
| 13-25-12 | 83.09   | 28-4-8   | 67.34   |
| 14-3-3   | 11.3    | 28-5-11  | 19.43   |
| 14-3-6   | 61.64   | 29-3-4   | 1034.71 |
| 14-22-6  | 20.34   | 29-3-5   | 17.42   |
| 15-3-5   | 14.63   | 30-0-15  | 46.56   |
| 15-5-5   | 32.14   | 30-3-3   | 101.29  |
| 15-8-12  | 359.12  | 30-10-10 | 42.84   |
| 15-10-10 | 84.00   | 32-3-5   | 89.92   |
| 15-15-15 | 466.83  | 32-3-10  | 234.96  |
| 15-30-15 | 211.90  | 32-4-8   | 255.65  |
| 16-4-8   | 15.02   | 32-5-7   | 109.05  |
| 16-8-8   | 22.58   | 33-3-6   | 12.66   |
| 16-32-16 | 42.77   | 33-3-10  | 12.36   |
| 18-0-18  | 29.6    | 35-3-5   | 343.43  |
| 18-4-10  | 33.38   | 36-6-6   | 33.72   |
| 18-5-9   | 58.93   |          |         |

Total tonnage: 38,092. Tonnage of listed grades: 15,638.

<sup>1</sup> To be included in the table a grade must have been manufactured by at least two different manufacturers with a total tonnage for all manufacturers of greater than 10 tons.

Table 3. Tonnages of selected fertilizer materials sold in Connecticut from July 1, 1992 to June 30, 1993.

| CHEMICAL NITROGEN      | TONS    | ORGANICS                 | TONS    |
|------------------------|---------|--------------------------|---------|
| ammonium nitrate       | 77.15   | manure                   | 1635.28 |
| calcium nitrate        | 172     | blood, dried             | 70.19   |
| ammonium sulfate       | 10.3    | sludge, sewage           | 466.0   |
| urea                   | 2656.7  |                          |         |
| PHOSPHATES             |         |                          |         |
| diammonium phosphate   | 1.0     | aluminum sulfate         | 1.89    |
| monoammonium phosphate | 1245.72 | borax                    | 44.78   |
| superphosphate, normal | 4.0     | ferrous sulfate          | 0.15    |
| superphosphate, triple | 129.87  | iron chelate             | 12.39   |
| bone meal, steamed     | 29.57   | gypsum (calcium sulfate) | 357.0   |
|                        |         | sulfur                   | 2.76    |
|                        |         | magnesia                 | 0.38    |
| POTASH                 |         |                          |         |
| muriate of potash      | 1728.3  |                          |         |
| potassium sulfate      | 12.25   |                          |         |



The Connecticut Agricultural Experiment Station, founded in 1875, is the first experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies. The laboratories of the Station are in New Haven and Windsor; its Lockwood Farm is in Hamden. Single copies of bulletins are available free upon request to Publications; Box 1106; New Haven, Connecticut 06504.

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